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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,728	10/27/2003	Tatsuya Fukunaga	117600	2392
25944	7590	09/19/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			LEE, BENNY T	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,728

Applicant(s)

FUKUNAGA, TATSUYA

Examiner

Benny Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2 June & 5 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 2, 3 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

The disclosure is objected to because of the following informalities: Page 2, line 17, note that --(Fig. 19A)-- should follow “E plane”; line 18, note that --(Fig. 19B)-- should follow “H plane”. Page 25, line 18, note that “The” should be rewritten as --As shown in Fig. 13, the-- for clarity of description. Appropriate correction is required.

The disclosure is objected to because of the following informalities: For the specification description of each drawing figure, note that all reference labels therein should be correspondingly described relative to that figure’s specification description. For the description of multiple figures (e.g. figs. 1-3, etc) the reference labels therein should be reference to those drawing figures in which they actually appear (unless they appear in each one of the multiple drawing figures). Appropriate correction is required.

The amendment filed 2 June 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In the replacement paragraph to page 21, line 21, sixth line therein, the change to --lowered-- from the originally recited “increased” appears to provide a diametrically opposite meaning from what was originally disclosed and thus raises the issue of “new matter”.

Applicant is required to cancel the new matter in the reply to this Office Action, unless applicants’ can explain why this diametric change is not “new matter” and provide an indication as to where support for this limitation can be found in the original disclosure.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, note that it is unclear what characterizes “decided on the basis”. Clarification is needed.

The following claims have been found objectionable for reasons set forth below:

In claim 1, fourth paragraph; claim 13, second paragraph; claim 14, first paragraph: note that --said-- should follow “bringing” and “electromagnetic waves” should be rephrased as --wherein the electromagnetic waves in said another mode-- for a proper characterization.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 6, 8, 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Uchimura et al (of record).

Uchimura et al (fig. 17) discloses a transition between a coplanar line comprising a waveguide conductor (96) disposed in a slot or opening (95) formed in the ground plane of a stacked waveguide (5). The waveguide (5) comprises an alternating stack of alternating conductive and insulative layers including upper and lower conductive layers interconnected by via holes (4). Again as evident from fig. 17, a slot or opening (90) permits the conductor (96) to electromagnetically couple to the waveguide (5) in a direction perpendicular to a stacking direction. Therefore, for such a configuration, the H field in the coplanar line inherently matches

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with the H field in waveguide (5), as known by those of ordinary skill in the art. As described at col. 5, ls 19, 20, by adjusting the spacing between vias to be less than one quarter wavelength, the coupling of energy from the coplanar line would not have leaked from waveguide (5) and thus optionally propagated therein.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchimura et al (of record).

Although the primary mode of propagation is the TE_{10} mode, clearly one of ordinary skill in the art would have found it obvious to have optimized the dimensions of the waveguide such as to have permitted additional propagating modes within the waveguide.

Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchimura et al in view of Takenoshita et al (both of record).

Uchimura et al discloses the claimed invention except for the second waveguide having plural propagating regions.

Takenoshita et al discloses a multi-layer stacked waveguide of type disclosed in Uchimura et al. In particular, note that such a waveguide is configured to have branched propagating regions.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the waveguide (5) of Uchimura et al to have been a branched waveguide structure

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as exemplarily taught by Takenoshita et al. Such a modification would have been deemed obvious in view of the same field of endeavor of the references (i.e. both pertain to stacked dielectric waveguide structures), thereby suggesting the compatability of the combination.

Applicant's arguments filed 2 June & 5 July 2005 have been fully considered but they are not persuasive.

Applicants' have argued that in Uchimura et al, a TEM mode is not converted to other modes and that the coplanar line is not short circuit to a ground layer of the waveguide by a direct connection. Similarly, as for Takenoshita et al, it has been argued that the structure therein is "completely different" from that recited in claims 9, 10 which requires a plurality of stacking structure.

Contrary to applicants' assertion, applicants' arguments that the TEM mode is not converted to other modes is not understood. As known to those of ordinary skill in the art, a coplanar waveguide inherently propagates in a TEM mode. Moreover, as known to those of ordinary skill in the art, a dielectric waveguide, in general, and in particular, a dielectric waveguide with stacked conductive layers, inherently must propagate in a non TEM mode. Therefore it stands to reason that a transition between a coplanar waveguide and a dielectric waveguide must inherently involve a transition between a TEM mode to a non TEM mode. With respect to the assertion that the coplanar waveguide is not short circuited to the waveguide, the examiner must respectfully disagree. It should be noted that the ground planes of the coplanar waveguide and the ground plane of the dielectric waveguide are indeed one in the same. Therefore, the coplanar waveguide and the dielectric waveguide must necessarily be short circuited, in a directly connected manner, to each other by virtue of the shared ground plane

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layers. As for the Takenoshita et al reference being “completely different” from the stacking structure of the claimed invention, such argument is not understood. It should be noted that the Takenoshita et al reference is similar to the Uchimura et al reference in that both constitute dielectric waveguides defined by stacked conductive layers electrically connected to each other. However, Takenoshita et al goes further in providing teachings of such a dielectric waveguide structure being configured with plural waveguides. Accordingly, given the analogous nature of the Uchimura et al & Takenoshita et al references, this would have suggested the compatability of such a modification, as set forth in the above rejection.

Claims 2, 3, 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

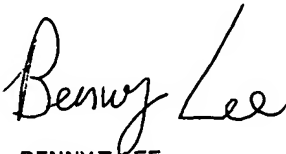
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication should be directed to Benny Lee at telephone number (571) 272-1764.

B. Lee


BENNY T. LEE
PRIMARY EXAMINER
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